

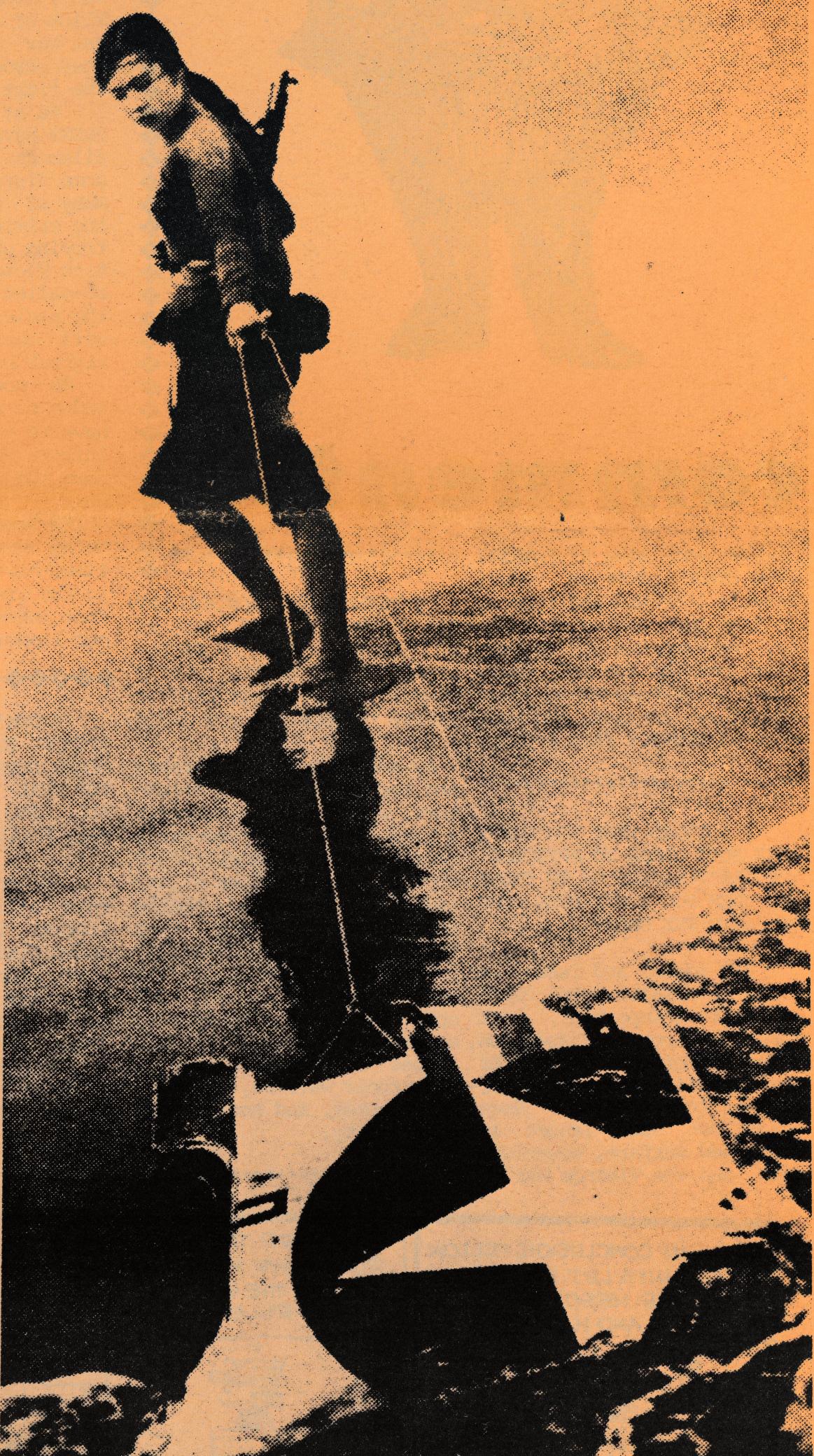
# Physics Free Press

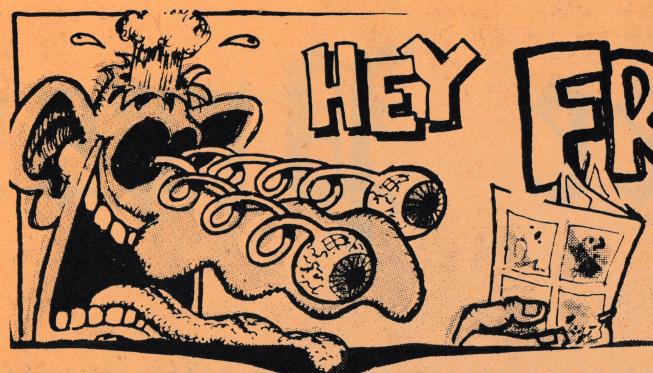
volume 1 number 3

NOVEMBER - DECEMBER 1972

***The Spirit  
of the  
People  
is Greater  
than the  
Man's  
Technology***

— Huey Newton





## comments...

The last issue of PHYSICS FREE PRESS provoked considerable interest and response from the physics community. We have decided to answer some of the many questions we've been asked about the style, content, and purpose of PHYSICS FREE PRESS.

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I THINK THE STYLE AND LAYOUT OF PHYSICS FREE PRESS IS TOO FREAKY. BEING AN ESTABLISHED MEMBER OF THE PHYSICS COMMUNITY, I FIND IT HARD TO RELATE TO YOUR FAR OUT STYLE.

By adding colorful phrases and the comix of counterculture, we want to establish a bond with the younger, semi-employed generation of physicists as well as signaling to the encrusted, senile physics establishment that times are indeed changing. Counterculture by itself, of course, is not enough. We only use it as a vehicle to express the more critical issues of the job crisis, electronic warfare, nuclear prostitutes, and social responsibility.

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I NOTICED THAT YOU DON'T SIGN YOUR NAMES TO ARTICLES. YOU CAN'T EXPECT US TO TRUST YOU WHEN YOU WON'T EVEN COME OUT INTO THE OPEN.

The ideas and issues we raise in PHYSICS FREE PRESS are what is important, not names. If you must judge us, mudge us for the content of our articles. What is important is that someone does point out such issues as automated warfare, unemployment, and the Vietnam War.

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**Here's the PFP**

## EDITORIAL

Shit flows downhill, they say. If you are low man on the totem pole, you may be the unwilling recipient of an unhealthy dose of crud. Think of this next time you receive 100 job rejection slips while your thesis advisor rakes it in, often lining his pocket with blood money from the Defense Dept. Think of this when the fat cat war criminals of JASON shed crocodile tears over the tight job situation.

We at the PHYSICS FREE PRESS have mulled over these dilemmas and have come to some disturbing conclusions. Many of us now realize that the criminals that are destroying physics, not to mention Vietnam, are also the so-called leaders of physics, the nuclear prostitutes who sell their wares to the highest Defense contractor.

We now realize that, in order to save physics, we have to discredit the moral infants who have led physics down the path of poverty and war.

We hope that our articles, being humorous and informative, have focused attention to the greed and opportunism that infests the minds of our leaders.

But PFP also realizes that these nuclear prostitutes represent only the outer layers of rot that festers in our society. Edward Teller, Glenn T. Seaborg, and Murray Gell-Man, no matter how many villages they have napalmed, represent only the symptoms of the sickness. It is no accident that the forces which pay these men to commit the cruelist of atrocities are also the same ones which create unemployment in young physicists. The enemy is not our thesis advisors. The enemy is called corporate greed, otherwise known as private enterprise, which crushes the workers at home and smashes liberation movements abroad. What do these corporations care about the job situation in physics when they allow nothing to distract them from seeking higher profits?

Though the articles in PFP may appear freaky, far-out, irreverent, and at times humorous, our main goal is to discredit the so-called leaders of physics while making physicists aware that they are expendable commodities in the fat hands of the corporations.

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I DON'T THINK YOU SHOULD ATTACK EDWARD TELLER AND GLENN SEABORG. THEY AREN'T THE REAL CRIMINALS, AFTER ALL, AND THEY DO HAVE TO MAKE A LIVING.

No one has the right to make a living by killing others. Like the scientists under Hitler, there are always unscrupulous scum who are eager to make lucrative profits off the war industries.

Of course, Teller and Seaborg are only the symptoms of the moral rot in this society.

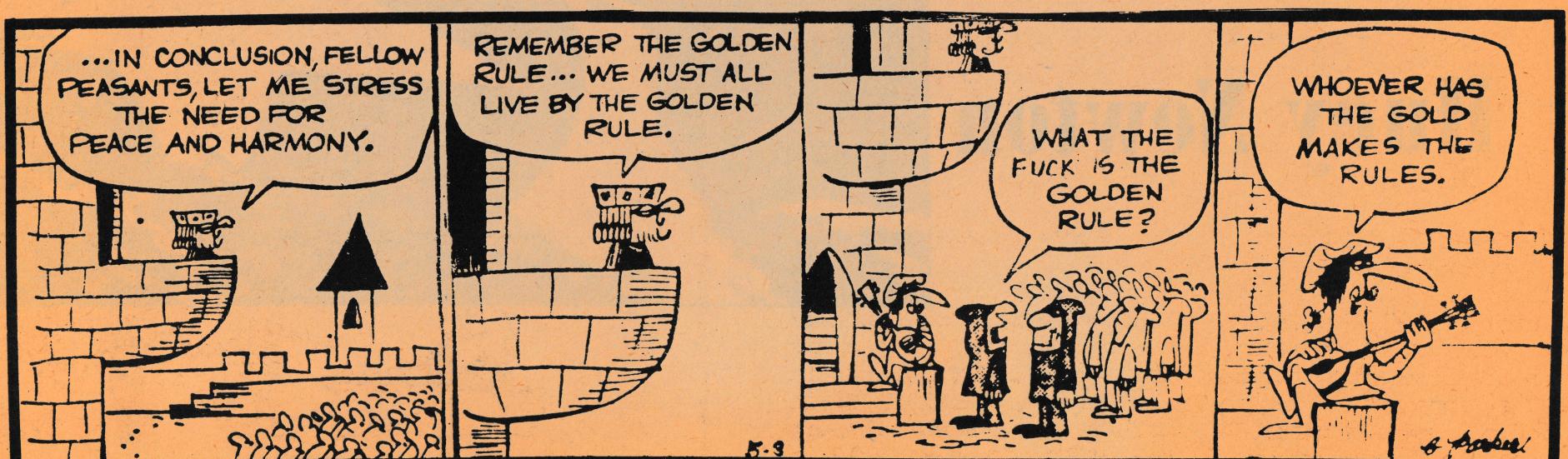
Men like these do not unleash the hellish fury of modern weaponry in Vietnam. These vermin only make it possible. The real devils are the Lockheeds, the General Dynamics, and the MacDonald-Douglas's that feed off the booty of war.

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I DON'T SEE WHAT YOU HOPE TO GAIN BY PUBLISHING PHYSICS FREE PRESS

First, PFP wishes to warn the nuclear prostitutes that

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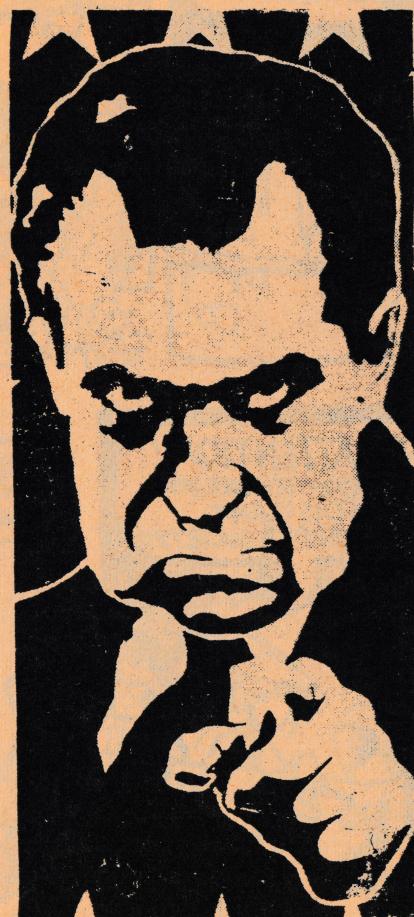
# Unemployment in

FREEDOM's just another word for NO JOB...

UNEMPLOYMENT ain't worth nothin' BUT IT'S FREE!

Ask a securely tenured physics professor about unemployment of young physicists and he will likely reply (with the usual pseudo-sagacity and profundity that arises from speaking with slow conviction), "A GOOD doctoral student can ALWAYS find a position."

Such an attitude, common among "big" physicists who have made insulation from the problems of society part of their professionalism, is belied by the facts. Accord-



## unemployment

ing to a 1971 study conducted by a committee of the APS,<sup>1</sup> MORE THAN 30% of all physicists who sought a position in traditional sectors of physics in the U.S. in 1970 FAILED TO FIND such positions.

A conservative estimate by the American Physicists Association (APA)<sup>2</sup> indicates that by 1975, 30% of all physicists will be unemployed as physicists, this pattern holding true through at least 1980. In absolute figures, out of the 7000 Ph.D. physicists to be produced between 1970 and 1975, there will be a SURPLUS of between 2300 and 4200 who will not find jobs in physics.<sup>3</sup>

The flood of new Ph.D.'s into a field which is already swamped is especially pronounced in particle physics, into which 1000 new Ph.D.'s will graduate from 1971 - 1973, although there were only 1500 Ph.D.'s in the field in the whole country at the beginning of 1971 !

### Grim Situation

The situation currently is grim, but would be even more critical if it weren't for the proliferation of temporary post-doc positions, which are absorbing many new Ph.D.'s into what may be called a "holding pattern". But only a finite number of

post-doc positions can be strung consecutively before one is forced completely out of the field by the almost total lack of Assistant Professorships.

This "holding pattern" is also a technique for employing much high-quality personnel at notoriously low wages, thus offering a vivid application of economic analysis to physics; i.e., that unemployment is beneficial to employers because it lowers everyone's wages.

The Commission on College Physics<sup>4</sup> stated the "holding pattern" problem succinctly: "The net number of new people entering teaching facilities has been dropping and will continue to drop. The result will be that, to a first approximation, the physics teaching profession, particularly in the tenured ranks, will be ESSENTIALLY CLOSED TO NEWCOMERS during the next two decades." The already tenured faculties of the universities will then have no new input and "WILL AGE TOGETHER."

### Curse in Disguise

One factor in the situation appears to be a blessing but is actually a curse in disguise. That factor is the projected DECREASE in college enrollments through the 1980's, particularly in

# Physics

physics, due to the falling slope of the post-war baby boom, lack of government support for producing more "surplus" scientists, and a well-documented growing aversion of students to science and scientists.

Does this mean less future competition for those already in physics? On the contrary, it means that at a time when the teaching profession becomes increasingly closed to newcomers, physics teachers will also become increasingly unneeded; i.e., there will be FEW STUDENTS TO TEACH.

sciences, in decreasing order.<sup>6</sup>

### Waste of Everything

What is at the root of this incredible waste of time, human effort, and money, of which the unemployed physicist is a victim? One can easily list some of the obvious reasons for the sudden evaporation of job opportunities:

- the end of the Sputnik scare which had stimulated science spending in the '50's and '60's;
- the failure of physicists to satisfy the Pentagon's hunger for a neutron bomb and the consequent drying up of government money;
- the Vietnam War inflation;
- the high overall unemployment rate and the "state of the economy";
- The failure of the government to "put its money where its mouth is" on programs such as ecology, and the irrelevance of basic physics to the solution of these problems even if money were supplied.

### Economics Strikes Physics

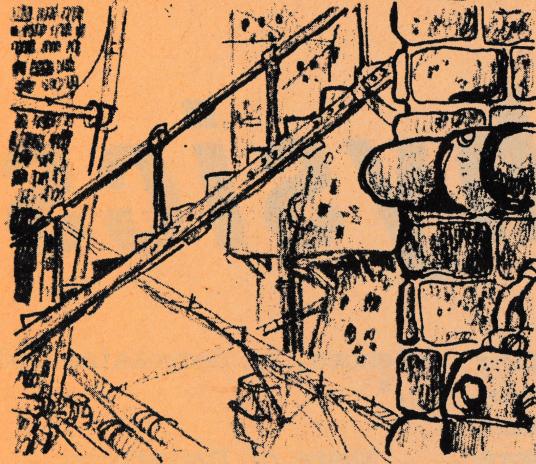
But other economic forces are at work which are making the job market and security of physicists hit new lows - in fact, forces threatening EVERYONE who does not own a bank or a few large corporations.

One of these forces is the need for ACCELERATING expansion to employ a steadily increasing supply of physicists. If, in a vastly oversimplified example, the government wanted to maintain the space program at a con-

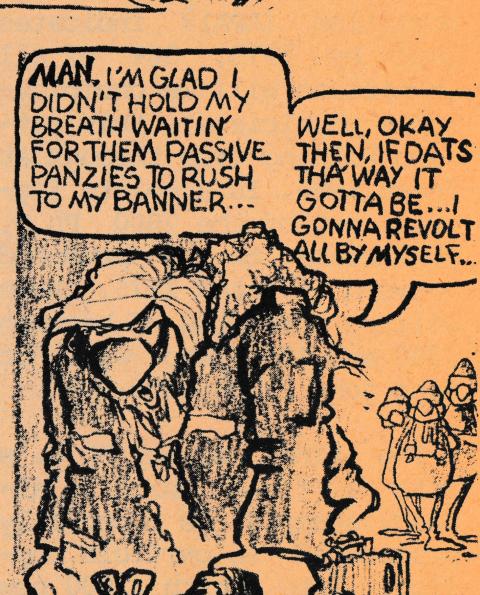
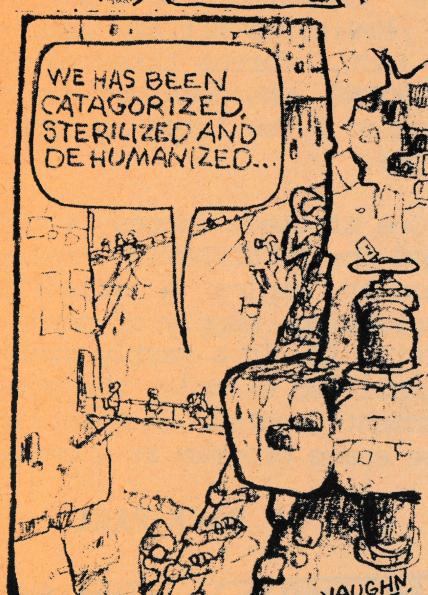
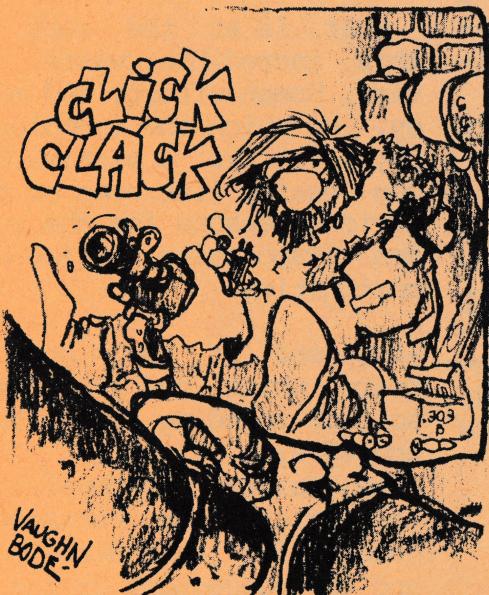
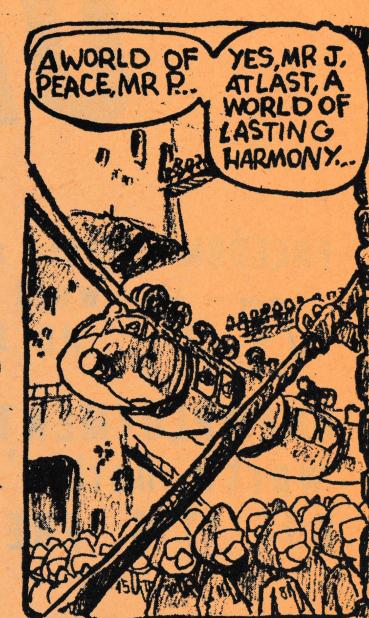
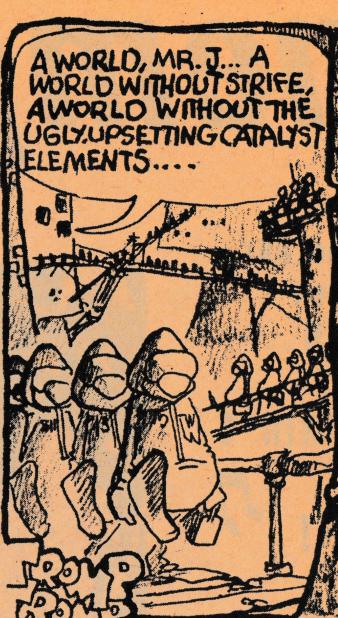
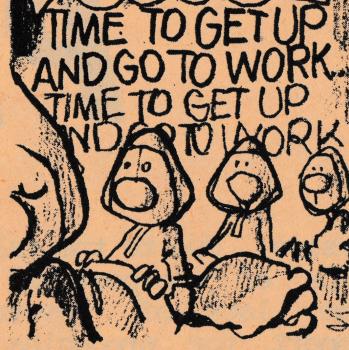
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# THE RUDDLE



# WOOD WOOD



Once upon a time, in the sleepy hollow of Burbank, Calif., there lived an outrageously scrawny fellow named Seymour Grindalot. Seymour, unlike the other seven year old boys, was not interested in peering under little Gloria Sweetmeat's dress, but in peering at science books in the library. Ever since Sputnik, while others would play spin the bottle with Gloria, he would dream of his future as a dynamic, publishing physicist. Being a hot shot, stud of a physicist would bring Gloria to his scrawny arms, he fondly mused.

For six years, Seymour had the misfortune of helplessly sitting behind Gloria in class. For six years, he would re-enact the same scene. He would clumsily peer from behind his atomic physics book; his horned rimmed glasses would fog up; he would blurt out, "Gloria, I...I...I..." to which Gloria would coo breathlessly, "Seymour, you creep!"

In high school, Seymour was never caught without a calculus book and slide rule. He also distained the unruly crowd of greasers, who invariably snickered out dirty jokes behind Gloria's back and kicked sand in Seymour's face at the beach. But he still felt confident. When he becomes a publishing physicist, Gloria would melt in his scrawny arms.

When Gloria was head cheerleader, all the guys would flock to the football games to see her skin-tight sweater - all but Seymour. Everytime Gloria swung into action, his glasses would fog up.

(Just as well, for Gloria

# PUBLISH and PERISH

would lead the crowd in idiotic cheers like "Get that ball, Push 'em back, and Seymour, you creep!"

After winning a scholarship to UCLA, he left the greasers behind and began to earnestly study quantum mechanics. His only irritation was his jock roommate, who would always close the door on Seymour while balling the local secretaries in town. One day, his glasses began to fog up as his roommate brought in Gloria with him. How can you study complex variables when soft cries of "Uh,Uh,Omigod, OOOOH, and Seymour, you creep!" come wafting in the air?

After graduating Summa Cum Laude, he went to Cal Tech to work under his childhood hero, Murray Jelly-Man. If only he could publish articles like that stud Jelly Gloria would hungrily caress his scrawny body, he thought.

One day, as the sound of shattering glass ripped thru the room, he furtively peered out his window, only to see

a seething, smelly, hairy mass of radicals four floors below, chanting "Off War Research, Science for the People, and Seymour, you creep!" His glasses fogged up. He hit the flusher.

saw Gloria, braless and bell-bottomed, in the crowd.

Then the roof fell on poor Seymour. His doctoral thesis on "Light Cone Commutators and Electroproduction" stunned the physics community, but only lowly Pepperdine offered him a post-doc job. The next fifteen papers he published on multiperipheral models won critical acclaim, but only L.A. State Women's Teachers College for the Handicapped offered him a job. Seymour flushed all his dreams of fame and Gloria down the toilet.

Why couldn't I get a job? Weren't all my papers good enough? Maybe I got B.O.?

While composing his 205th job application on his sagging typewriter, he buried his head in his scrawny arms and began to think of suicide. Seymour went to the

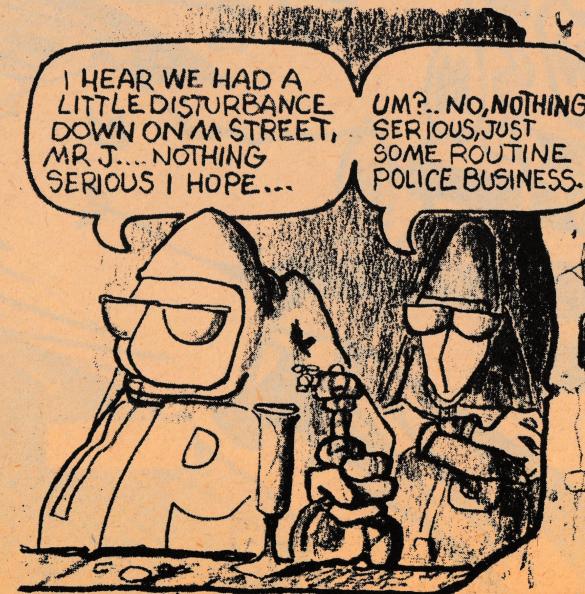
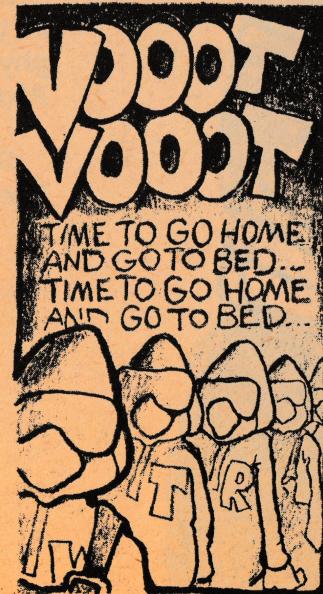
bathroom to look for razor blades - BUT WAIT! - he suddenly spied an old issue of that commie paper, PHYSICS FREE PRESS. Seymour had long ago been too poor to afford toilet paper, so the PHYSICS FREE PRESS made a fine substitute, excepting the ink would run sometimes, and the ink made him itch. As he flipped through the cheap, dog-eared pages of PHYSICS FREE PRESS, everything began to make sense. A new feeling of lust for life swelled in him as he read each page. The pieces began to fall together. In his enthusiasm, he roared through the bathroom, as fast as his scrawny legs would carry him, and tripped over head first in the toilet bowl. His head almost became a victim to Archimedes Principle as his legs

After fumigating his face, he began to read PFP's hard-hitting articles on nuclear prostitutes and war criminals in science, its no-holds barred stand on social responsibility, its gut level denunciation of war research, but mainly its dirty jokes.

Seymour's spirits were raised with radical determination, his head was together with soul-wrenching convictions, and his fingers were blackened with cheap ink.

It's no accident that Murray Jelly-Man lines his pockets with blood money from JASON while his own students have to panhandle to live. It's no accident that Vietnamese children get roasted by Jelly-Man's research, he thought, wildly pacing the room. Seymour was hopping mad. It's no accident that

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Ever been to an APS conference? Huh? Great show. The best in town. Nothing beats an APS meeting for triviality and sheer gall. One thing you notice about an APS conference is that there are two distinct types of physicists there.

#### Peacock

First, you have the Peacocks (commonly called the Big Names or the Haves); you know, the ones who strut around the conference floor, admiring each others' feathers. They are commonly found with graying hair, business suits, and they often frequent expensive bars near the conference, boasting of their ranch homes and yachts and their latest Defense Contracts. The entire conference revolves around them and they won't let you forget it.

#### Squirrel

Next, you have the Squirrels (commonly called the Have-Nots or Post-Docs), the nameless, jobless hordes of the unemployed, scurrying around the Peacocks for leftover jobs. They spend much of their time churning out papers and saving money to go to APS conferences. The Squirrels are easily identi-

fiable; they look so uncomfortable with their new haircuts and suits, bought special for the occasion.

#### Meat Market

Squirrels are most easily found at the Meat Market (called the Placement Center by the Peacocks), an unemployment service which is publicized enough to assuage the Peacock's moral conscience but located far enough away so they won't have to be bothered. Since upwards of 700 Have-Nots are competing for no more than 50 jobs at the Meat Market, many hopes and promising careers are dashed to bits there.

#### Squirrels Upset

In the old days, the

Squirrels tolerated the system, knowing that they, too, might become Peacocks and strut leisurely above the common masses. But now that jobs are tight and the Peacocks show no intention of rocking the boat, some of the Squirrels have become tired of stretching their diminishing paychecks and hearing the same excuses from the wealthy Peacocks.

These Liberated Squirrels are most often found seizing microphones from startled Peacocks, copies of **PHYSICS FREE PRESS** clutched tightly in hand, demonstrating against the Defense Contracts cherished by a few of the greedier Peacocks.

Jolted and annoyed, the Peacocks think that Liberated Squirrels are immaturely acting out hostilities a-

gainst their parents. But many Squirrels begin to realize that organizing into a large political body, not pinching nickels and dimes, is the correct path to take.

#### Third Animal

There is a third animal who is hardly visible from the APS conference floor and not himself a physicist, but who exercises the most profound influence on the conference itself. This is the Pig (commonly called the Super - Rich, the Corporations, the Man), who demonstrates little, if any, interest in physics except as it applies to war.

The Pig, when he isn't making deposits at the bank, can most easily be found in smoke-filled rooms in Washington, deciding the fate of both Peacock and Squirrel.

The Pig first decides on what profits he wants and then gives the left-overs for the Peacock and Squirrel to fight over. (Of course, the Peacock and Squirrel think their money comes from the Pentagon and NSF, not realizing that this money is only what's left over after Pig profits.) The fact that such a coarse creature like the Pig even tolerates the existence of the Peacock and Squirrel in his farmyard is because they provide valuable skills for feeding his war/profit machine.

#### Silly Game

Meanwhile, back at the conference, both the Peacock and Squirrel play out their silly game, the Peacock collecting Brownie points, the Squirrel collecting rejection slips, both too self-centered to realize that all major decisions affecting physics are being made by Pigs behind closed doors.

Stupid, huh? Great show. The best in town.



# ANTI-PERSONNEL

## Physics

At a time when most fields of physics are dying, one branch of it is growing like a cancer : ANTI-PERSONNEL PHYSICS, hereafter abbreviated APP. That APP is growing so fast is easily understood when it is realized that successful quashing of revolutionary movements in unindustrialized countries against hostile peasants requires a colonial power to inflict severe dislocation on the enemy society and to kill or pacify all guerrilla agitators, even if many "neutral" peasants must also be sacrificed in the clean-up.

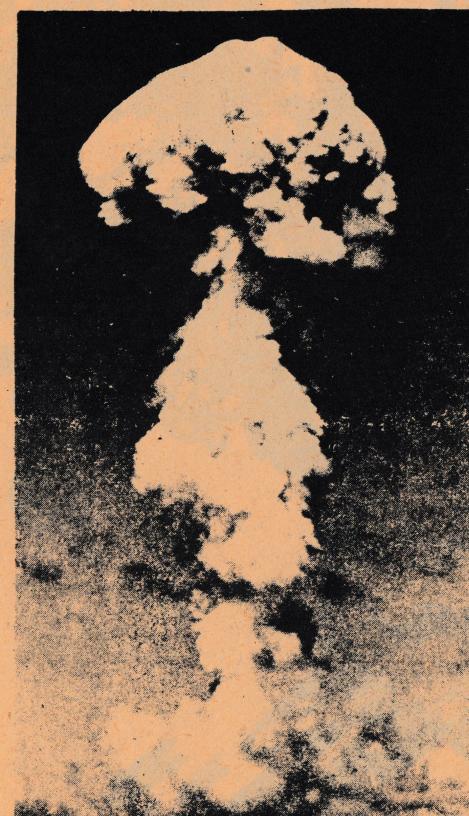
A well-known analogy aptly describes the situation: in guerrilla warfare, the "enemy" lives among the people, "like fish in the sea." For the United States in Indochina, ANTI-PERSONNEL PHYSICS means "draining the sea"; i.e., killing and maiming peasants, herding them into "pacified" areas, and rendering entire regions unfit for civilian population.

The need is for the tools of genocide, and some of the great minds of applied physics are now meeting that need with new war devices, many of which are described in this article.

### ENVIRONMENTAL GENOCIDE

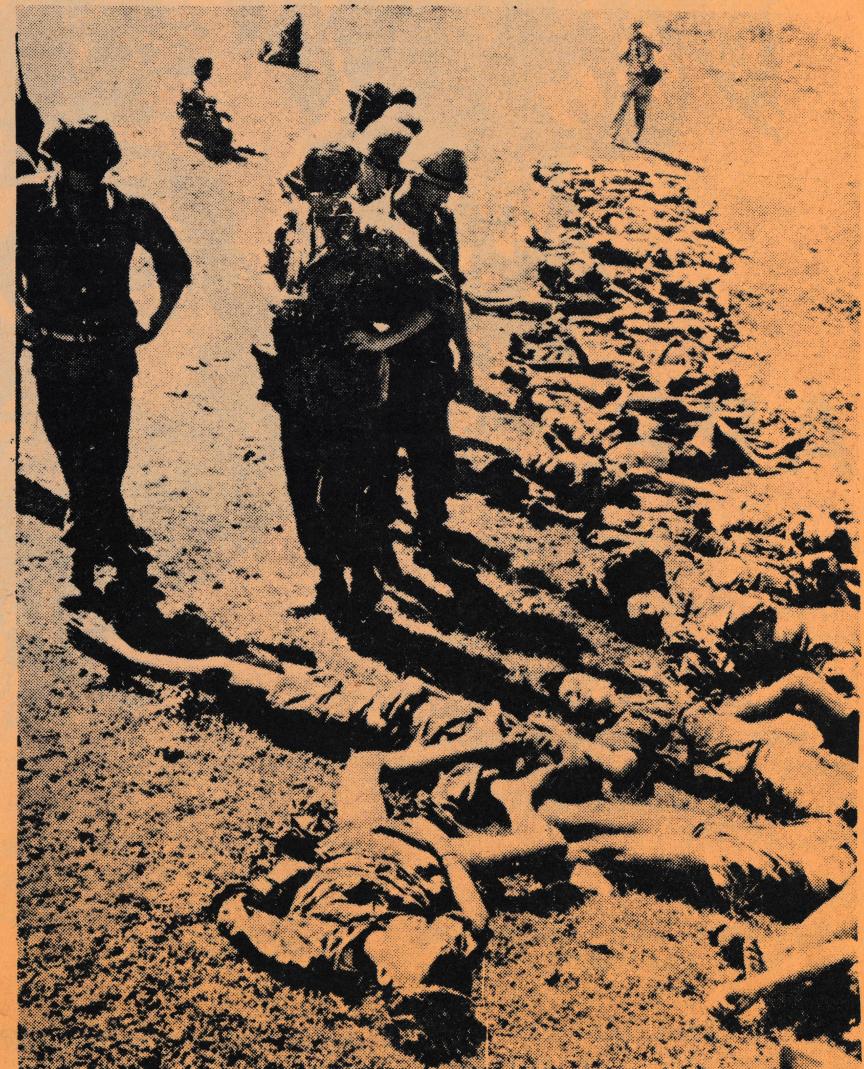
#### Rainmaking.

Rainmaking may be one of the most bizarre attempts by scientists hired by the Pentagon to deliberately alter the ecology in order to kill people. Although Pentagon



scientific spokesmen have been extremely and suspiciously tight-lipped in Senator Clairborne Pell's hearings on the matter, the Pentagon Papers reveal that cloud-seeding experiments have definitely been carried out over Laos in 1966 (part of Operation Popeye) and notes that their continuance was recommended. As a result, another rainmaking project, entitled "Intermediary Compatriot", was started in 1967 and ostensibly led to extensive flooding along jungle trails making communications and services difficult.

But the primary threat of cloud-seeding is coupled with the bombing of dikes, where artificially induced deluges can collapse bomb-cracked river dikes, leading to death and starvation for hundreds of thousands of



peasants in devastating floods.

The Pentagon has commented only that all these matters are "classified". (See SCIENCE, 16 June, 1972).

#### SCIENTIFIC EXPLOSIVES

##### BLU-26B Guava Bomb.

The basic fragmentation bomblet; two hundred 1/4-inch steel balls fly out when the bomblet explodes. The pellets' spin causes them to follow erratic paths when they enter the body, tearing open serious wounds and making them difficult to remove. The production of these bomblets has more than doubled since Nixon has been "winding down" the war.

##### Gravel Mines

An anti-personnel mine sewn into a cloth square 3" on a side, Gravel explodes plastic fragments, untraceable by x-ray. "There is nothing to do but cut and probe.", declared U.S. surgeon Dr. Phillip Harvey during a recent visit to North Vietnam.

Gravel mines cannot blow even a hole in a truck tire, much less a concrete or metal structure, but will blow off a man's foot. (See NEW SCIENTIST, 13 July 1972, and Pentagon Papers).

##### SPIW

Short for Special Purpose

Individual Weapon, this is a rifle and grenade launcher which fires thousands of steel or plastic finned needles. Each needle creates a tiny hole on entering the flesh and a gaping hole upon leaving because of the tumbling fins, and heat and

#### CONT. ON NEXT PAGE

B-52's (In Thailand and Guam)		About 80		over 150
Fighter-Bombers (In South Vietnam and Thailand and on carriers)		400		1000
Carriers (plus the Oriskany, on way to area)		3		7
Men aboard Seventh Fleet carriers and other ships		15,000		46,000
In Thailand		32,000		63,000
In South Vietnam		95,500		68,100

"Never before in the Vietnam war, or perhaps in any war, has air power been used with such ferocity. Military sources have confirmed, for example, that strikes by B-52 stratofortresses, each of which drops 24 tons of bombs, have been used against enemy groups as small as 20 or 30 men."

New York Times  
May 27, 1972



# anti personnel

## APP... Cont. from page

shock waves created upon entry.

This shock effect is designed to increase SPIW's kill probability by assuring that even a hit in the hand or foot will have a lethal effect on the nervous system. (see BALTIMORE SUN, 15 Aug., 1971).

### WAAPM

Wide Area Anti -Personnel Mine. When the WAAPM dispenser lands after a drop from a U.S. fighter bomber, several springs pop out from each mine, carrying fine wires many yards from the bomb. Should people walk in the area and disturb any of the hundreds of wired mines scattered about, the mine detonates, spreading shrapnel over a 60-yard circle.

This weapon does not destroy structures but can make entire villages uninhabitable.

### Rockeye II Cluster Bomb

This bomblet has a "shaped charge" head which can penetrate hardened targets such as concrete or armor. Once inside, the munition explodes. "The fringe benefit

you derive from this", explains Air Force Commander Haley, "is the anti-personnel effect."

Rockeye II, like WAAPM, could conceivably be used only on so-called "military targets", although no justification exists for an imperialist power to strike at ANY target in a small nation defending itself against colonization. But both weapons ARE definitely used against CIVILIAN targets. According to Agence - France Press and the N.Y. Times, North Vietnamese hospitals, villages, and air-raid shelters have been the real targets. Furthermore, over HALF the bombs dropped in Indochina have been anti-personnel bombs, reinforcing the fact that the Pentagon's "military target" is REALLY the civilian population.

### Flutter Bomb

These brightly colored "toys" lie benignly on the ground, beckoning playing Vietnamese children to handle them. When contacted, however, they explode with enough force to blow off arms, legs, or face, but not enough to kill. The maimed children then become a heavy burden on the "enemy" society, much more so than if the children had been instantly killed.

Maiming rather than killing in order to produce maximum dislocation and suffering is a constant theme of the Vietnam War; the Pentagon regards casualties/ dollar as even more significant than deaths/dollar.

### Phosphorous Cluster Bomb.

Many projectiles used in anti-personnel warfare are lethal to people but harmless to structures; however, white phosphorous cluster bombs are most clearly designed to maim. When contacted from an exploding bomb, white phosphorous clings, producing an intensely hot burning, leaving holes in the flesh. Embedded fragments sometimes continue to burn for weeks in their victims.

### CBU-55 (FAEW) Cluster Bomb.

The Fuel Air Explosive Weapon (FAEW) releases ethylene dioxide "fuel" when the bomb hits the ground. The fuel then mixes with the air to form a highly explosive cloud which is detonated by a timed ignitor. "The blast levels vegetation, destroys structures which it has penetrated, and kills enemy personnel by blast overpres-

sure." (See ORDNANCE, Sept.-Oct., 1971).

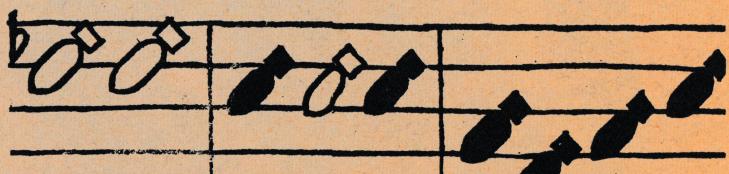
All of the above anti-personnel weapons require intricate timed fuzes, the design of which is another fertile area of APP investigation.

### AUTOMATED BATTLEFIELD

The automated battlefield system consists of several interrelated parts, combining into a killing machine requiring minimum human intervention, decision, perception, and responsibility.

A ground sensor detects the presence of life and either directly triggers a delay fuze on an anti-personnel mine, or alerts a computer command and control center which evaluates data and orders strikes in the form of manned bombers, unmanned bomber drones, fuzed

FROM THE ME-KONG DELTA, TO THE CEN-TRAL



HIGH-LANDS, THIS LAND WAS MADE FOR THIEU AND



mines, or guided missiles.

Some of the components now used or being developed are described below.

#### XMS Chemical Detector

Known as the "people sniffer", this detector employs mercury cadmium telluride to sniff hydrocarbon molecules; other chemical detectors sense traces of ammonia from human perspiration.

#### Physical Sensors

Magnetic "anti-intrusion" metal detectors trace metal in not only "military" vehicles, but also in objects such as a peasants' handheld hoe or rake.

Microwave radar sensors detect Doppler shifted reflections indicating people's movement, and aerial infrared detectors locate heat from night encampments.

Sensors comprise "the true heart of the system around which all the rest is structured", according to Brig. Gen. William Evans.

#### Drones

Unmanned flying bombers, or drones, exemplify the automated death machine in its most diabolical form. Guided by microwave tracking systems, the Firebee drone releases 500-pound bombs on "enemy" populations while the pilot sits coolly in rear ground command headquarters. NO MORE human responsibility, no more POW's, only automated death. In addition,



A Firebee drone release 500-pound bombs in tests at White Sands Missile Range, N.M., in this sequence of 16 mm motion picture film. It's expected that eventually

expendable drones, armed with a warhead can be used as an air-to-surface missile.

The complex electronic guidance, jamming, and computer systems backing up these flying phantom terrors are major contributions of Anti - Personnel Physics to the art of mass remote-controlled slaughter.

#### ELECTRO-OPTICAL WARFARE

#### Lasers

Laser guided bombs have been credited by Pentagon apologists with supposedly decreasing civilian casualties by more accurately pinpointing "enemy" military targets. But on - the - scene Western observers report past bombing patterns indicate a deliberate U.S. attempt to crush hospitals, schools, and villages, many bombed repeatedly over periods of months even where no military targets exist for miles around.

The myth of the "military

target" remains a myth even in the much-touted mining of Haiphong harbor; recent N.Y. Times articles reveal that 85% of Haiphong's shipping business was the importation of FOOD, not military hardware or fuel which is mostly imported by rail. Nixon was aware of this from the beginning of the mining; his clear attempt is to starve the Vietnamese people in the north.

Such being the history, it is clear that the so-called "smart" laser bombs will no more be used to strike military targets than were the

previous "dumb" bombs; instead, they will be used to even more efficiently and accurately inflict suffering upon the people of North Vietnam. One cannot be surprised then, that already major targets of laser bombs are river dike maintenance centers and sluice gates (See NEW SCIENTIST, 13 July, 1972).

#### Laser guns

The Air Force is now testing the potential of high-powered gas dynamic lasers as "death ray" guns at the Special Weapons Laboratory in Kirtland A.F. Base, New Mexico, hopefully to incinerate targets from a distance (NEW SCIENTIST 13 July 1972).

Although the Pentagon and their hireling scientists at university and industrial laboratories are throwing tremendous amounts of money and brains into advanced APP weaponry, real admiration is due not to the products of their perverted labors, but to the tenacity and spirit of the Vietnamese people who have endured the receiving end of American science and technology for years and who cannot be defeated by it.

#### OTHER SCIENCES

Physics-related weaponry has been emphasized in this article, but that is not to play down the U.S. government's attempts to pervert other sciences. Chemical defoliants spread on food crops, development of viruses that attack only Asians (the so-called "ethnic weapons"), the attempt to create firestorms (see SCIENCE, 21 July, 1972), all these point to the same unavoidable conclusion: that the Pentagon



pilots will remotely fly these drones from ground control stations in rear areas to bomb targets under combat environments.

and the war-criminal scientists it has bought are turning U.S. science into an enemy of the people of the world.

#### WANT TO PROTEST?

If the thought of science as a public enemy enrages you, then the government defines you as a radical and you too may receive some of science's unwelcome favors, as follows.

#### Non-lethal Police Weapons

The Security Planning Corporation, working under NSF contract, issued a report this year on "non-lethal" police weapons to be used on civilian demonstrators (see SCIENCE, 12 May 1972).

Recommendations include "sound curdlers" which will shreak so loudly they "create discomfort and precipitate dispersion", dart guns, the "instant cocoon" meaning globs of adhesive strings played onto a demonstration causing individuals to stick together thereby facilitating mass arrest, and the "taser" which fires electrified barbs which snag in the victim's clothing, paralyzing him until the current is switched off.

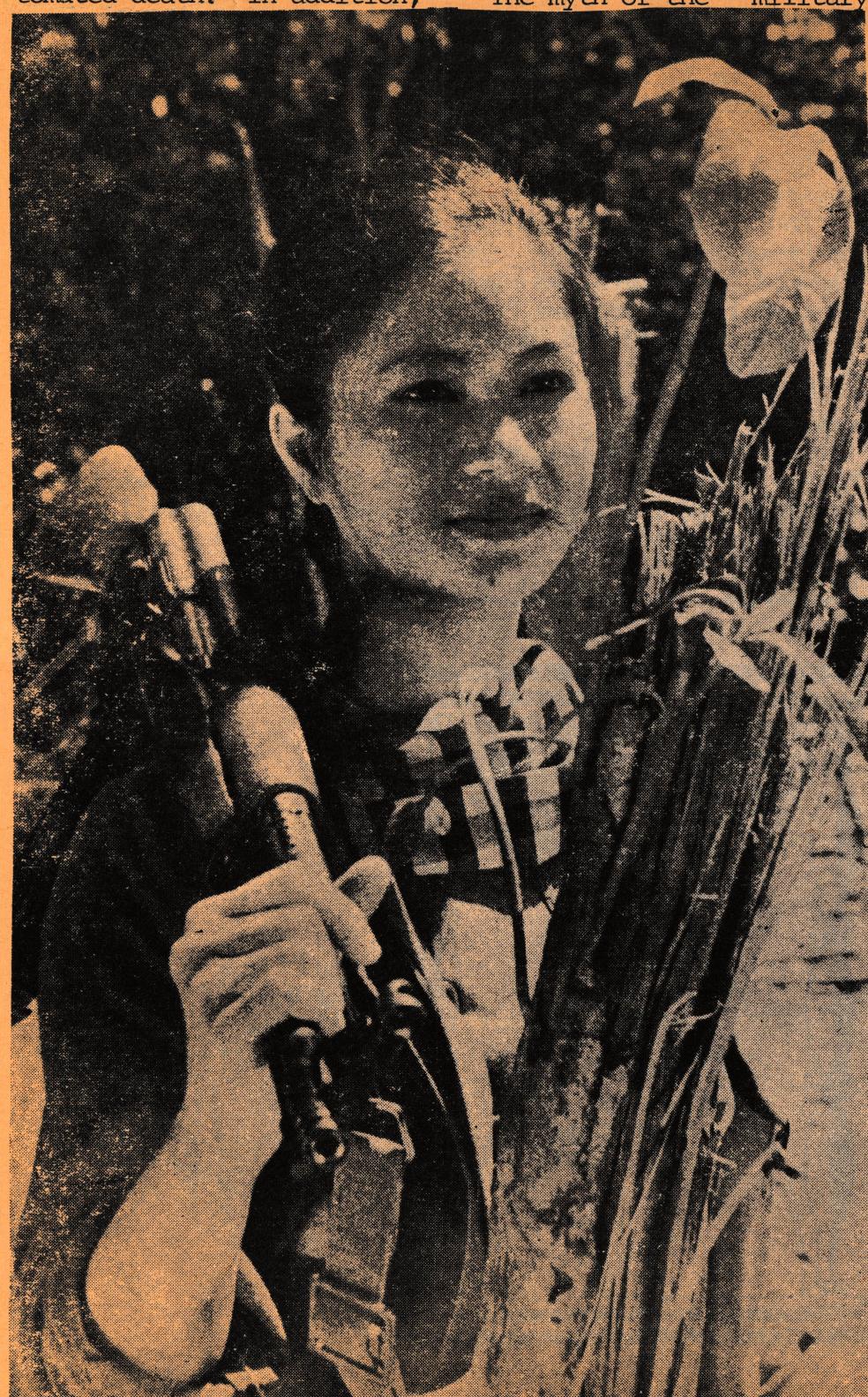
Note that these proposed weapons only add to, rather than replace, lethal police weapons, and the combination opens up a new dimension to the curtailment of civil liberties.

#### WHO DOES IT

Manufacturing the products of Anti - Personnel Physics means profits to some big corporations. Honeywell, ITT, Tenneco, Dow Chemical, Fairchild, General Dynamics, Motorola, Sperry Rand, G.E., AT&T, and IBM are only a few of the giant corporations making blood money in APP.

#### CURING THE CANCER

Yes, Anti-Personnel Physics is certainly a growing field - growing like a cancer, in fact. If cancer is really mediated by a virus, then pig scientists working in APP are that virus, and the imperialist system for which they work is the cancer-producing genetic defect. The cure: complete surgical removal of the malignancy.



# WAR CRIMINALS I HAVE LOVED and KNOWN

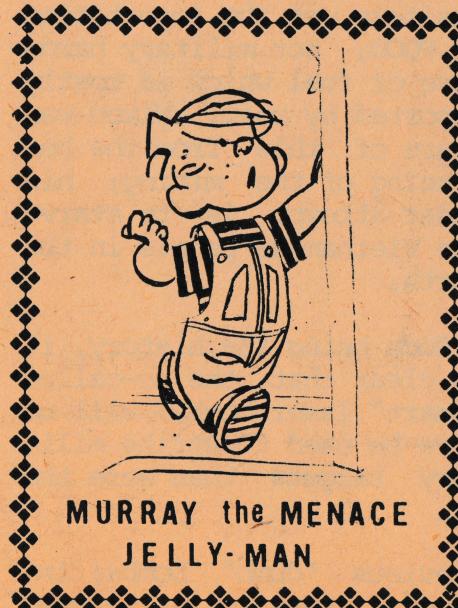
In previous issues of PHYSICS FREE PRESS, we've been proud to give you the most outrageous, most hilarious war criminals from the smelly analis of physics, war criminals who have done their patriotic part in satisfying America's thirst for mischief, mayhem, and blood-lust. These hell-spawned nuclear prostitutes have done their share in roasting our country's enemies and barbecuing Vietnamese children.

Who can forget the antics of our first winner, Edward (The Ham) Yeller? When radical freaks tried to disrupt a speech, he cunningly tickled those ruffians to death with his eyebrows. And who can forget last issue's winner, that playful clown, Glenn (The Turd) Seabottom? As chairman of the Annihilate the Ecology Commission (AEC), his visionary crusade to give a fair share of radiation to all his countrymen will be etched in everyone's heart, mind, and chromosome.



**Edward the Ham Yeller**

And now we give you this issue's winner, that fabulous cut-up, the brains behind "Brains for Hire," the madame of all nuclear prostitutes: MURRAY (THE MENACE) JELLY-MAN!



**MURRAY the MENACE  
JELLY-MAN**

We recite some of his greatest achievements. Murray has added new chapters to the art of engineering. In Vietnam, for example, he never leaves a stone unturned, a harbor unmined, a dike unbombed, or a baby unburned. He has also mastered the art of diplomacy and tact in difficult, dangerous situations, like when someone asks for a job. Above all, he is a fair man. He sells his brain to any and all persons, rich and poor alike, who can meet his price.

We are now especially proud to announce a PFP exclusive, a candid interview with the Menace himself, taped in his seat in his own bathroom. We found him wearing a general's uniform, with a colorful but over-

sized admiral's cap, pondering over a huge map of Vietnam, looking every inch like a pint-sized Napoleon. He was wearing buttons, also oversized, on his vest, with slogans like "Happiness is a B-52," "Peace through Napalm," and "A Bomb a Day Keeps the Commies Away."

Our first question was, "We understand you know a lot about saturation bombing, ecocide, free fire zones, automated warfare, and anti-personnel weapons. Why do you spend so much time on Vietnam?"

He paused for a moment, then replied learnedly, "Because it's there.... or was, anyway."

"Ha, Ha, Ha," we laughed. "That's funny. Now tell us, what advice do you have for our readers?"

"Well," he said, "I guess I would tell them, 'Study hard, study long, and be sure to consult'"

"Ah, consult your thesis advisor?" we asked.

"No, stupid, consult for the Defense Department. In times of great need, we must all come to the defense."

"Ah, defense of our country?" we asked.

"No, stupid, our pocketbooks."

Our next question was, "Now tell us Murray, what do you think of the employment problem in physics?"

"Unemployment? UNEMPLOYMENT? Why, we at JASON thought up the idea! We were appalled at the lack of new brains going into the Defense Department and the surplus of shaggy, commie young physicists. By reducing funds, we drive the pinkos into panhandling and swell the ranks of red-blood American bomb-makers."

Then the color from his face paled a bit. Almost silently, he said, "But you know, this job squeeze idea has made some dupes become violent. We can't go anywhere without being picketed or disrupted. Now tell me, stupid, do you know anything about these violent disruptions?"

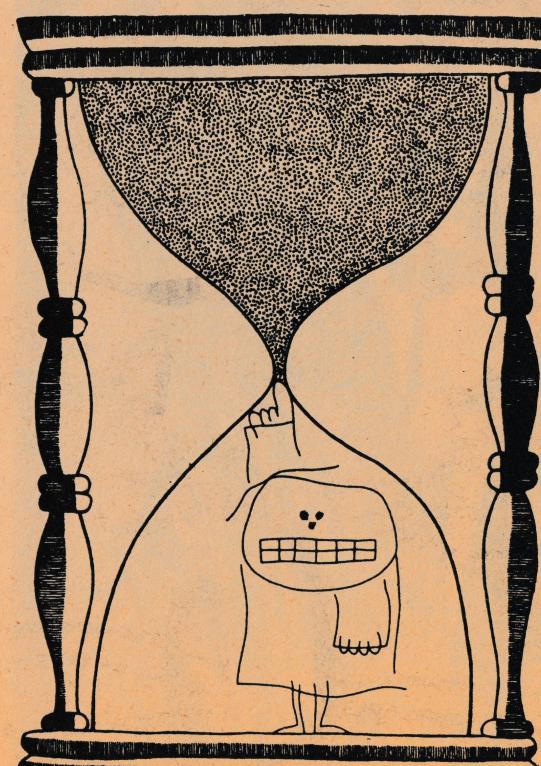


**Glenn Turd Seabottom**

"Violent disruptions? VIOLENT DISRUPTIONS? Why, we at PHYSICS FREE PRESS were the ones who thought it up!"

Thus ended our interview with the Menace. He did make a valid criticism of PFP, however. He objected to the description "nuclear prostitutes" because it is offensive and untrue. We agree that nuclear prostitute does not accurately describe a man of Murray's salary and stature.

In the future, we will use the name "nuclear call girl" instead.



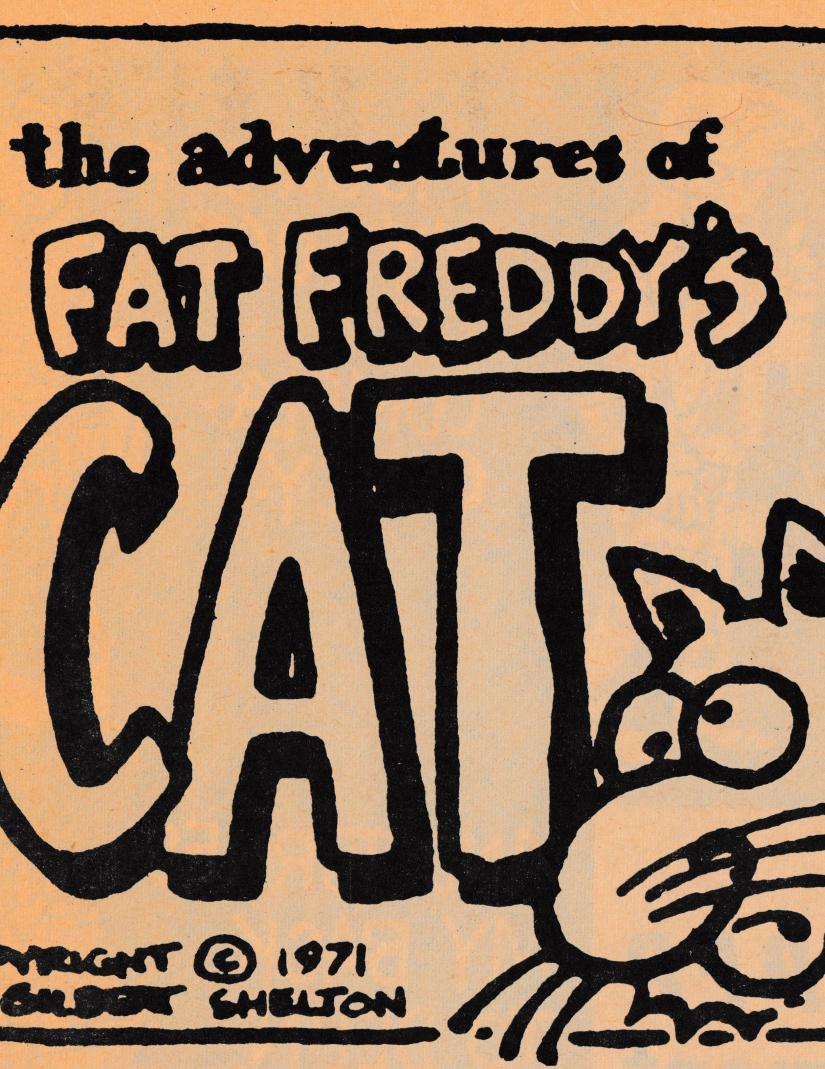
## Publish and Perish cont. from pg. 5

this time his leg almost became a victim of Archimedes Principle.

Seymour fumigated his leg, then grabbed the yellow pages, found "PHYSICS FREE PRESS Commune" listed under "Counterculture", drove deep into the L. A. hills, then gallantly burst into the bull pen of the PFP, amid gasps of "Far fucking out, Hey, man, dig that heavy dude, and Seymour, you creep!" Seymour's glasses began to fog up.

Seymour is now editor of "War Criminals I Have Loved and Known" column of PFP. Sensuous, flowing locks now cover his once crew-cut scalp. Beads and the peace symbol have replaced his slide rule. Seymour spends most of his time seizing microphones and pulling down his pants at APS meetings, not to mention placing PFP in all toilets. Sometimes he goes down to the beach to kick sand in the greasers' faces. By the way, Seymour takes off his glasses while making love to Gloria.

the adventures of  
**FAT FREDDY'S  
CAT**



© 1971  
BY GLENN SHELTON

SEE THAT DUDE  
OVER THERE ?  
HE'S CALLED THE  
DOGCATCHER !

11

... AND WHEN HE  
CATCHES A DOG, HE  
TAKES IT OFF TO A  
PLACE CALLED  
THE POUND ...

... AND THEY PUT  
IT IN A CHAMBER  
AND GAS IT TO DEATH !

WELL, IT SOUNDS  
LIKE A GOOD  
IDEA TO ME !

HE  
DOES  
CATS,  
TOO ..

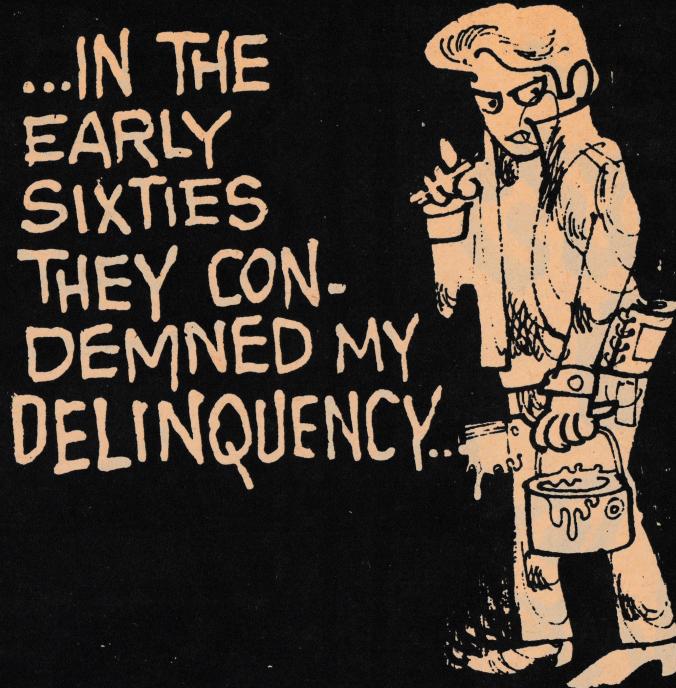
YOU'RE JOKING ! THAT  
COULDNT HAPPEN  
HERE IN AMERICA !

END

IN THE FIFTIES  
THEY CHIDED ME  
FOR MY  
COMPLA-  
CENCY...



...IN THE  
EARLY  
SIXTIES  
THEY CON-  
DEMNED MY  
DELINQUENCY.



I TOOK OFF  
MY COAT  
OF  
COMPLA-  
CENCY...



AND TURNED  
MY BACK  
TO DELIN-  
QUENCY...



I BEGAN  
TO THINK,  
FEEL,  
SEE...  
AND  
GOT  
IN-  
VOLVED..



NOW..

THEY'RE  
AFTER  
MY  
HEAD



inform and arouse physicists into political action.

The specific forms of political action are decided by local groups where, of course, anonymity is not possible or desirable.

Also, any future editors can decide whether or not they, too, want to be anonymous. Either way, we hope this issue stimulates future ones.



## How to Synthesize PFP in your own Basement

You can publish and distribute on your initiative your own issues of the PHYSICS FREE PRESS, and its easier than it might appear. We invite you to use both the PFP name and consecutive numbering of the issues, either anonymously or not, so that PFP may continue as a voice of the radical movement in physics.

Here's how to assemble a newspaper:

1. Write the articles and/or gather them from other sources.

2. Either:

a) Type them up (with right margin justified if preferred) and preferably use an IBM Selectric with a non-reusable carbon ribbon on good white paper, so that the final product looks sharp and contrasty. This is the method used in this issue.

b) Take the articles to a professional typesetter who will type the articles with widths, margins, and professional typefaces of your choice on high-quality paper. This method looks slicker than typing up articles yourself, but it tends to get expensive.

In both (a) and (b) the typed product is the actual size it will appear in the newspaper, so plan column widths accordingly.

3. Collect graphics (drawings, cartoons, photos, etc.) from magazines, underground newspapers, etc., or draw up some yourself. The more contrasty, the better the final product will be.

4. Find a printing company that does small-order photo-offset printing of tabloid-size newspapers, and obtain several cardboard layout sheets from them.

5. On each cardboard layout sheet, cut and paste the typed articles in the arrangement you desire. Each

layout sheet corresponds to one surface of a sheet of the final newspaper.

For example, on one of the eight cardboard layout sheets for a planned sixteen page paper, you would paste the articles and graphics for page 2 on the left half and page 15 on the right half, exactly as you want them to appear in the final newspaper.

6. Headlines, borders, etc., can be drawn in or Instant-Type letters can be used, available from stationary stores. EVERYTHING on the layout sheets will be in the final product and vice-versa.

7. Bring your completed cardboard layout sheets back to the printing company which will then photograph each one and from these photographs make printing plates, ready for inking and use in printing. After printing on its press, the company will assemble and fold the printed sheets in the correct page order.

All you have to do then, is give them the completed layout sheets and they do the rest.

8. How many copies? You can estimate that from how and where you will distribute them; i.e., personally into department mailboxes, via SESPA mailing list, thru friends, etc.

9. The cost without professional typesetting is approximately \$220 per 3000 copies for a 16 page issue.

10. If this cost is prohibitive, you can do fewer pages or just put out mimeographed issues or possibly even send them to contacts around the country who can reproduce them further and distribute.

The editors of this issue are physics grads and post-docs. We apologize for remaining anonymous (in order to maximize the time we are free of FBI harassment) but we feel that this is not seriously damaging to the purpose of this nationally-distributed newspaper, which is to

# STEPS to DISILLUSION a Young Physicist

I

As you walk into Dr. Fartsworth's office, you timidly wonder, "Why would the world's distinguished expert on low-temperature thermal conductivity of doped  $\text{CaF}_2$  ever agree to take ME as a graduate research assistant? ME - with my B+ in Solid State - and him - with his Nat. Acad. Sci. membership, his consultantship with ITT, 150 published works, and well-chewed pipe. I was in his course, but I wonder if he ever saw me."

II

As he puffs pipe-smoke in your face, he tells you his research group is large, but yes, he can "take on" one more student in the fall. He gives you a stack of his most recent works for you to read. You're in the group!

III

Let's see - what are Fartsworth's articles?

REFINEMENT OF PARISER-PARR-POPLE CALCULATIONS ON PRAESEODYMIUM CRYSTALS.

LOW-TEMPERATURE THERMAL CONDUCTIVITY OF LANTHANUM FLUORIDES: DEVIATION FROM DEBYE APPROXIMATION.

SPLITTING OF METASTABLE  $4f^6 5d$  EXCITED CONFIGURATION IN CRYSTALLINE  $\text{Gd-CaF}_2$  AT LOW TEMPERATURES.

A twinge of boredom and frustration touches down, but you chase it away with the thought that you are reading REAL science.

PARISER-PARR-POPLE METHODS APPLIED TO Gd-DOPED  $\text{CaF}_2$ .

Does Fartsworth really LIKE this shit?

IV

Well, there you are, fixing the leak in the vacuum system which insulates the liquid helium which cools the neodymium strontium chloride crystal which needs to have a splitting in its absorption spectrum looked at, for some reason.

V

Fartsworth gets the funds to take you to the Gordon Solid-State Conference in Boulder, Colorado with him. He invites you; you say yes as you think, "Wow! Near the Rockies! I can get in some hiking!" Apparently, Fartsworth wants to keep up with new developments in calcium fluoride. Sure he does, right?

VI

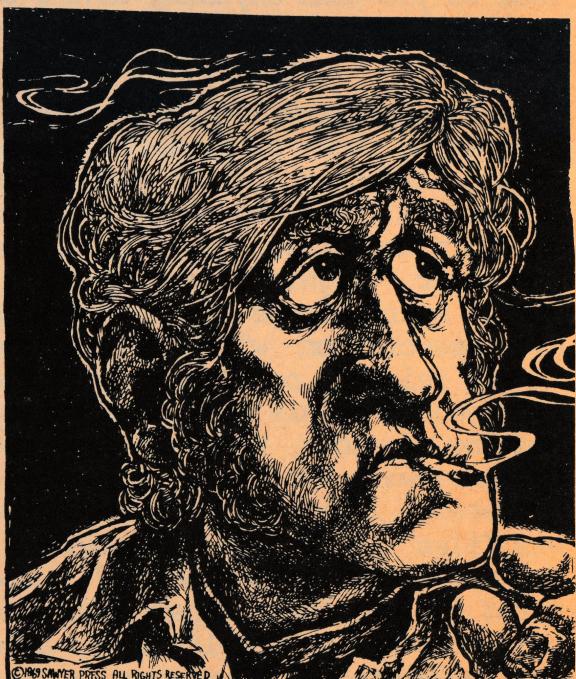
The lobby and conference rooms of the Boulder Hilton are filled with well-dressed DR. Fartsworths from all over the country, a debutante's ball of physicists, a veritable mutual admiration society for the peacocks of physics, all circulating from clump to clump, talking and building their reputations.

VII

Fartsworth advises you, "Don't talk about your neodymium experiment with Jim Weiss over there; he's in the same field." "Gee, I hope his

vacuum system is busted too, or he'll publish first!", you think. It's O.K., you talk to Jim Weiss about the weather in Colorado and he slyly doesn't mention neodymium either.

Hey, there's Stan, one of Fartsworth's former students. "Hiya Stan, watcha doin' here?" Stan looks grim. He tells you how he can't find a job after two years as a post-doc, so now he's scavenging around the big-shots in the lobby hoping to discover a tentative job offer. He can't



talk long, 'cause there are hundreds of young physicists around the lobby looking for the same dough and he must resume the hunt.

VIII

The travel grant paid for plane fare and hotel for this conference, \$815, enough to pay a post-doc one month, but now Fartsworth is using it up in his ten-minute talk on lanthanon-doped  $\text{CaF}_2$ . (That's \$81.50 per minute. You think, "is ten minutes nearly long enough to summarize two years of research? Or maybe it's ten minutes TOO long."

But you learn fast in those ten minutes. Fartsworth's goal is to glibly mention ideas it took both of you two months to fully grasp; to be both confusing and smooth, bored and witty; and above all, to IMPRESS. And the audience IS impressed; a few wise guys make attempts to steal away the victory with irrelevant and puzzling questions, but Fartsworth can handle them. He's a real pro. Everyone is properly bamboozled and Fartsworth is smiling.

Ten minutes later, after the next talk, no one in the room remembers anything about lanthanon-doped  $\text{CaF}_2$ , but they do remember DR. Fartsworth. Mission accomplished.

IX

You finally complete your first paper, but even its appearance in a "highly respected" and thick bi-weekly journal sandwiched between two other equally dull and opaque articles fails to alleviate your growing boredom and disillusionment with a career in physics, a career which once seemed to promise excitement, glamor, and importance.

Are you going to spend your whole life in a mad, cutthroat ego-trip just to see your name in print every six months? Or is the real pleasure in seeing your name referenced in someone else's useless article?

To detect  
an enemy

or protect  
a friend--

Rely on microwave systems  
from MICROLAB/FXR!

CONT. ON NEXT PAGE

# 14 disillusion... cont. from page 13

The morning TRIBUNE headline grabs your throat:

## CAMPUS ANTI-WAR CRAZIES INVADE COMPUTER CENTER

Bastards! (They sure have balls, though.) Don't they have any respect for anything? (Maybe they're not so crazy). Those punks screwed up some professor's military-contracted programs! (Far trucking out!)

You don't like violence, but the computer take-over looks more relevant to you than anything that's sat on your lab bench for the last two years.

XI

The University Faculty Meeting is discussing how to preserve its academic chastity in the face of the computer's rape by anti-war demonstrators and other crazy hoods. One professor, highly respected for his public spiritedness as indicated by his association with IDA and "defense-related problems", sobs that two years of his work on simulated bombing missions has been destroyed by anti-war violence. A poli-sci professor indignantly declares that his files on "Elites and Leadership in Anti-Communist Cambodians", prepared for the State Department, have been stolen and published in a local underground newspaper, a clear violation of his academic freedom.

Then Prof. Fartsworth gets up to denounce the freaks, saying that computers and electronics are the greatest advance for civilization since the TV, therefore to attack a computer is an uncivilized act.

Of course, he doesn't mention the untold advantages of electronic, computerized warfare to the civilization of Vietnam.

The professors are now finished farting in unison against the threat to their collective existence, and return to their offices to individually resume slitting each other's professional throats, perhaps to emerge again if their academic freedom is again touched by the turmoil of the real world.

XII

By now, your irrelevant research project, the ego-based seminars and conferences, the race to publish, the social hypocrisy of your professors, all these are bringing you to unexpected conclusions about the world of physics. It is a world full of corrupting contradictions, just like any other big business: mutual cooperation is only a route to personal advancement; communication is meant to confuse; progress is measured in published papers per year, quantitatively, just like the GNP; and just like the economy, Big Physics thrives via hypocrisy, competition, deception, waste, and irrelevancy.

The startling similarity between Big Physics and private big business is no accident, either. Consultantships, research for industry, and technological aids to imperialist wars, all put physics in the service of big business, sometimes directly but often indirectly through the government. Both physics and business are based on the "every man for himself" principle. Although there are a few "winners" - the Seaborgs and Tellers in physics and the DuPonts and Rockefellers in business - most everyone else loses through disillusionment, mental anguish, and the threat, now real, of imminent unemployment.

## The DIFFERENCE between GARBAGE and PFP

On a Coca-Cola machine paper cup, the following inspiring message is written: "Support Ecology - DON'T LITTER". Aside from the inherent hypocrisy of such a message on a disposable cup, the advice on the cup's exterior deserves a lot more digesting than the near-poisonous brown liquid bubbling inside the cup. Scientific research toward the solution of ecological problems attracts the minds of many frustrated physicists being squeezed by unemployment and irrelevancy in their own field. Is there a place for physicists in the "war on pollution"?

One socially useful application of physics to ecology is combatting the so-called "energy crisis". Development of non-polluting fusion and solar power sources seems promising, and one would think such research is heavily supported. It is not: the NSF's proposed budget for solar conversion research in 1973 is \$4 million, the cost of a few hours of the Vietnam War. (SCIENCE NEWS, June 17, 1972). And the AEC and monopoly power companies are putting their heaviest emphasis on building dangerous above-ground fission plants rather than clean fusion.

Why is there no major effort in this most promising direction? First of all, the power companies want quick sources of power, no matter how filthy, to "serve" a rapidly expanding network of energy consumption. Unfortunately, the benefits of such unplanned, rapid expansion does not filter down much to us ordinary folks, but rather pours itself into mushrooming industrial empires which produce massive quantities of exhaust-belching automobiles, war materials, and expensive luxuries.

We need only refer to Henry Ford II's explanation of Detroit's predilection for producing large, energy-wasting cars: "Minicars make miniprofits." Conversely, he might as well had described the planned obsolescence of the cars as the need of automotive industries to achieve "maxiprofits". Either way, you can be sure the rapid increase in power consumption will convert mostly into corporate waste and profit rather than improved quality of life.

Time to develop fusion and solar power could be bought by slowing the consumption of present fossil fuels. But such an approach collides head-on with the oil companies' greedy profit motive and their friends, the powerful highway lobby, neither of which want substantial public money spent on economical, clean alternatives to the private car.

Another environmental field in

"Look, kid, we're aware of the problems besetting our society. We're working on them."

which physics can make a contribution is recycling. How, for example, can garbage be scanned for aluminum and chromium and the organic remainder be combined with sewage for return to the soil as fertilizer? Too bad the mining industry finds it more profitable to rip-off minerals from the land and people of South America and the chemical industry rakes it in from their sales of chemical fertilizer. Through their powerful influence over government, these giants have opposed any ecological moves that hurt their business profits.

Physics could design pollution detection devices handy enough for workers to use at their place of work, where pollution is the most severe. But this type of research doesn't get funded, for the same reason that industries don't install pollution control devices on their own factory emissions and government fines for such emissions are ridiculously low and rarely imposed: i.e., corporate profits stand to suffer.

Although the government calls its environmental efforts a "war" on pollution, its efforts are nowhere near as well-financed and profitable to corporations as the REAL wars it fights against the people of the Third World. Pollution war is just not the type of war private enterprise can support.

Nevertheless, the social need for anti-pollution research definitely exists, and physics can supply some of the expertise needed. In fact, the only impediment to real progress is the backward system of private enterprise with its attendant waste and pollution arising from its all-pervasive drive for profits. But such a system is dispensable, in favor of a planned system controlled by, and serving the needs of the people in harmony with the earth's ecology.



# dear abby

## Scientist Scratches Self in Public



Dear Abby,

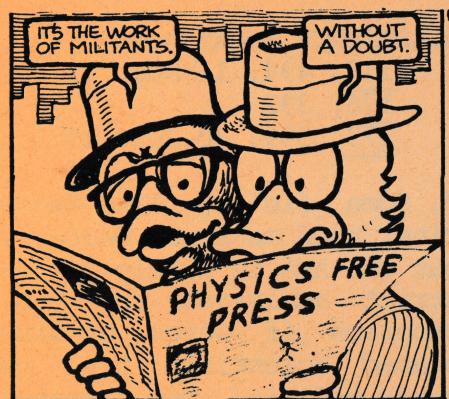
I am having sex problems with my wife Tabby, Abby. It all started when I landed my job as a weapons systems consultant with the Jason Division of IDA. Everytime I was right in the middle of being intimate with Tabby, Abby, the Pentagon would phone up seeking some technical advice. Questions about smart-smart bombs, dum-dum pellets, protective killability, and so on, all right in the very MIDDLE, you remember.

Well, needless to say, Abby, Tabby jilted me for some hairy freak. So I have turned to the services of prostitutes for satisfaction of my mature needs. But it's still no good. That damn phone still rings right in the middle. How can I separate business from pleasure?

Murray Gell-Boy

DEAR MURRAY,

AS YOU SAY, "IT'S STILL NO GOOD." TWO PROSTITUTES CANNOT BOTH DO BUSINESS IN THE SAME PLACE AT THE SAME TIME.



Dear Abby,

Sometimes people ask me what a big-time Lockheed physicist like me does in his spare time. Why, I pick my nose, scratch my ass, laugh at my own jokes, and take enemas.

F. Pick Noze, Ph.D.

P.S. Guess what the "F" in my name stands for?

DEAR FASCIST PICK,

I THINK YOU'RE AN ENEMA OF THE PEOPLE.

\* \* \*

Dear Abby,

Moe, my lab co-worker, asked me to help him on some physics. But as I helped, he gradually became increasingly more irritable. Now he won't even talk to me anymore. Is it bad breath? (I have breathed a sample into the envelope before sealing.)

Oral Odor

DEAR ORAL,

THE ANSWER TO YOUR QUESTION IS YES. BUT SOMETHING ELSE TURNED MOE OFF, BE-

CAUSE ONE WHIFF OF YOUR BREATH WOULD TURN HIM OFF MUCH FASTER THAN "GRADUALLY".

In physics, competition is stronger than friendship. When Moe asked for your help he understandably only wanted to show you how smart he is for working on such a difficult problem. The LAST thing he wanted was your correct advice, because that made him feel stupid, thereby defeating his purpose in asking your help in the first place. In other words, to help a scientific friend is to become his enemy.

NOW DON'T YOU FEEL STUPID YOU ASKED MY ADVICE?

\* \* \*

Dear Abby,

One of the guys in the sewer where I worked lent me his copy of the last issue of the PHYSICS FREE PRESS. Upon reading it, I became so roaringly, rip-snortingly, bombastically, furiously BORED, my I.Q. dropped to zero. I was even too bored to breathe, so I died. Yesterday, they buried me.

Bored Stiff

DEAR STIFF,

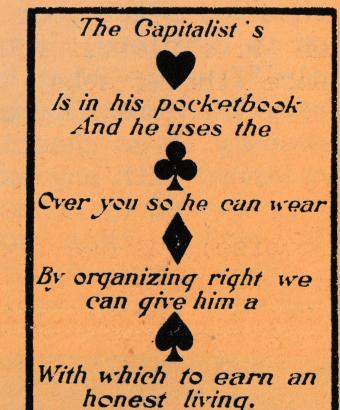
NOW YOUR I.Q. IS MINUS SIX.

sicist what it was like to be in Nazi Germany. After pondering the question a bit, he replied, "Oh, the same as it is now. They were saying 'Don't protest, you might drive Hitler to the right. They were saying that, by working for the Nazi, they could make changes from within. Some physicists were teaching classes as the tanks rolled into Czechoslovakia."

The comparison between Nixon and Hitler, of course, is unfair. Nixon is far more criminal. Nixon is unleashing a war machine that Hitler could only dream about.

We are tired of hearing the whores at JASON and IDA say they can reform the system from within, while they merely allow their brains to be picked by the Pentagon. The only person who ever did any good by working within the system was Daniel Ellsberg.

As far as being out in left field goes, the PFP



hopes to become a broad-based movement among progressive forces in the physics community. We have no intention of being an isolated movement.

I THINK THAT PHYSICS FREE PRESS IS TOO EXTREME. I'M SICK OF HEARING OF UNEMPLOYMENT AND THE BOMBING FROM YOU RABBLEROUSERS. IF YOU HATE THE IMMORALITY OF OUR SYSTEM SO MUCH, YOU SHOULD LEAVE THE COUNTRY AND GO TO RUSSIA.

You combat evil by staying to fight it, not by leaving. Our battle is in America, not Russia. We are American physicists. we are children of Sputnik, new math, and television. We seek to overturn the moral corruption and inequities that infest this country.

\*\*\*\*\*  
I THINK IT'S ABOUT TIME THAT THERE WAS A PHYSICS FREE PRESS. I'M GLAD SOMEONE'S GOT THE BALLS TO SAY THE KING HAS NO CLOTHES.



THOUGH YOU SEE SO MANY INJUSTICES, I THINK YOU STILL OUGHT TO WORK WITHIN THE SYSTEM TO CHANGE IT FROM WITHIN, RATHER THAN BEING OUT IN LEFT FIELD.

# Unemployment

continued from pg. 3

tant size, many scientists whose jobs depend on expanding the space effort into new fields would be fired. If, on the other hand, the space program was slated to expand at a constant rate, no one would be fired but no one would be hired either. Only an ACCELERATING growth rate in certain government and industrial programs can increase the numbers of scientific personnel hired.

But it appears unlikely the government will find the resources to accelerate growth in scientific fields in which it now fails to maintain even a constant level of support.

## Free and Unemployed

A more basic cause of the unemployment problem stems from the very nature of our "free" enterprise system, and that is, after your education is complete, you are plainly "free". (What could be freer than unemployment?) The economy is so chaotically unplanned with any expansion motivated by corporate profit rather than social need, that a fair distribution of wealth with full em-

ployment is, unfortunately, an exceedingly rare accident. Despite what big businessmen say, maximizing profits and serving the public are not synonymous.

## Quickie Solutions

Various liberal solutions have been suggested to alleviate the unemployment problem.

Allan M. Cartter<sup>5</sup>, the very first educator to foresee the impending unemployment in science back in 1966, suggests that universities curtail Ph.D. production. Aside from the fact that established professors need graduate students to build up their research empires and will therefore be reluctant to limit their own supply of student researchers, the question of WHERE the people who are denied admission to Ph.D. programs are to go is totally ignored. But since unemployment is rampant in almost all other pursuits, the answer is obvious: students not admitted to Physics Ph.D. programs WILL WIND UP UNEMPLOYED IN SOME OTHER FIELD.

Cartter further suggests that tenure and retirement policies be modified in ord-

